

SUPPLEMENTAL REPORT

TO THE

SANITARY COMMITTEE

OF THE

HONOURABLE THE COMMISSIONERS OF SEWERS
OF THE CITY OF LONDON,

ON THE SUBJECT OF A

CONSTANT SUPPLY OF WATER IN COURTS
AND ALLEYS.

BY

W. SEDGWICK SAUNDERS, M.D.,

PRESIDENT OF THE HUNTERIAN SOCIETY,
MEDICAL OFFICER OF HEALTH AND FOOD ANALYST.

9th March, 1875.

LONDON:

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1875.



*At a Meeting of the Commissioners of Sewers
of the City of London, held in the
Guildhall of the said City, on Tuesday,
the 16th day of March, 1875,*

JOHN STAPLES, ESQ., IN THE CHAIR

THE Report of the Sanitary Committee, dated this day, was read—

Submitting, *inter alia*,—

A Report from the Medical Officer of Health, calling attention to the delay in the erection of Stand-pipes in certain Courts and Alleys, and furnishing additional evidence in proof of defective Water-supply therein.

ORDERED—

That the said Report of the Medical Officer of Health on the question of Water-supply be printed and circulated among the Members of this Court, and the consideration thereof be adjourned.

HENRY BLAKE,

Principal Clerk.



TO THE SANITARY COMMITTEE OF THE HONOURABLE
COMMISSIONERS OF SEWERS OF THE CITY OF LONDON.

GUILDHALL,
9th March, 1875.

GENTLEMEN,

The scanty supply of water, and the very defective condition of the receptacles used for its storage, in some of the most unhealthy and crowded places in the City, the constant presence of preventable and other diseases in the same, and the approach of warmer weather, which must inevitably aggravate the evils attendant upon such neglect, make me contemplate with dismay any further procrastination in the erection of the 65 "Hydrants" or "Stand-pipes" ordered by your Honourable Court on the 13th November, 1874.

It will be remembered that these 65 Stand-pipes were intended to supply 536 houses, situated in 50 courts and alleys, and were suggested by me in addition to the 17 already existing in various parts of the City. This order was issued in response to my report on the subject presented on the 12th September last.

It will be convenient in the future to adopt the language of the Metropolitan Water Act, 1871, which describes the apparatus erected on public ways for domestic purposes as "*Stand-pipes*," as contradistinguished from that used for cleansing streets and extinguishing fires, which are therein termed "*Hydrants*."

Your Engineer having reported that the New River Company has agreed to give this constant supply, and the Local Government Board having been informed thereof, as required by the Act, and no objection having been raised, I feel impelled by a strong sense of the responsibility imposed upon me by my office, and the very serious consequences which may possibly result from any further delay, to bring the subject again before you, by supplementing the facts described in my former report with some additional evidence of the necessity of at once proceeding with the works you have already sanctioned.

My own daily observation, the independent testimony of the District Medical Officers of the City of London Union, and the reports of the Sanitary Inspectors, alike convince me that the time has arrived when the pressing need for these Stand-pipes should be brought to your serious notice. In support of this opinion I may state that diarrhœa, fever, and kindred diseases are rarely absent from

those courts in which the water-supply is either deficient, or where the receptacles which contain it are so placed as to invite direct contamination of the only supply accessible to the people in occupation. Thus, in Fire Ball Court, four cases of fever were treated by Mr. Sequeira, commencing with diarrhœa, which that gentleman traced directly to a foul cistern, placed in the basement of the dwelling, the water in which had become polluted by the poisonous gases given off by the sewer beneath, into which the waste or overflow pipe had immediate communication ; these four cases all occurred in one house (No. 2). Similar instances of cause and effect might be multiplied to a painful, and not very creditable, extent, and incontestible proof adduced of the constant presence of zymotic diseases, due entirely to the disregard of the first principles of hygiene.

At my request, Inspectors Clarke, Payne, and Saltmarsh have examined those places in which, in their judgment, the water-supply requires the earliest attention, and the following embodies the result of such inquiries :

Inspector Clark reports as follows :—"February 25th, 1875.—In compliance with your request I beg to submit a list of places in the West District where the water-supply is in a very neglected state, the butts or cisterns in most cases are either

“ rotten, or in some way leaky. These were reported
 “ to the late Medical Officer on more than one occasion.
 “ His wish was, that the Inspectors should not call
 “ upon the landlords to erect new water receptacles,
 “ as the Hydrants to the several courts would soon
 “ be placed.

“ WEST DISTRICT.

“ Ely Court, Nos. 8, 9, and 10.—66 persons
 “ reside in these three houses, and the total water-
 “ supply is 250 gallons. In this court there have
 “ been several cases of fever.

“ Ireland Yard, Nos. 5, 6, 8, 9, 10, 11, and 12.—
 “ (At No. 11 there is one cistern, holding 180 gallons,
 “ for 27 persons.)

“ Blewit’s Buildings, Nos. 2 to 13.—(Two cases of
 “ fever have occurred in this place).

“ Currier’s Row, Nos. 2, 3, 4, 5, and 6.

“ Norwich Court, Fetter Lane, Nos. 1 to 20.

“ Cloister Court, No. 5.—At this house the supply
 “ is limited to a small butt in a yard, holding 48
 “ gallons, for 12 persons.”

Inspector Payne says :—“ February 27th, 1875.—I
 “ beg to submit to you a list of places in the East
 “ District where the water receptacles are in a leaky

“ and, in some cases, rotten condition. Our instructions from the late Medical Officer were not to interfere with the repairs to the cisterns and water-butts more than was absolutely necessary, as he thought there would be, within a short time, a great alteration in the supply of water to that class of property, by fixing Hydrants in the public way.

“ EAST DISTRICT.

“ No. 5, Hutchinson’s Avenue.—Six rooms ; five families, nine adults and six children. I think there are many more, but in consequence of their being Poles, and not speaking English, I could not understand them. There is one cistern only, having a capacity of 98 gallons, placed over the water-closet.

“ Nos. 1 to 30, Hutchinson’s Avenue.—Small cisterns over water-closets of houses. These 30 houses contain over 400 people.

“ No. 109, Gravel Lane, corner of Amelia Place.—17 adults and 12 children. The house is a double one, and contains 10 rooms ; ground floor used as a German eating house. Cistern, the capacity of which is 58 gallons, over water-closet.

“ No. 4, Meeting-house Yard.—Used as a German lodging house ; five rooms. Man, wife, and four children ; seven beds for single men, but it is

“believed that many more are lodged at night.
 “One cistern, containing 143 gallons, over water-
 “closet.

“Nos. 1 to 17, Angel Alley, Stoney Lane.—
 “Small cistern over water-closet.

“Nos. 1, 2, 3, 4, 5, 6, 7, Turner Square.—Only one
 “cistern over a water-closet to these seven houses.
 “Six cases of fever (of which two were fatal) occurred
 “recently in this place.

“Nos. 1 to 10, Garden Place.—Two small cisterns,
 “each placed over a water-closet, supply these 10
 “houses.

“Providence Place.—There are but three cisterns
 “for these 20 houses, which are placed over water-
 “closets.”

Inspector Saltmarsh reports :—“February 25th,
 “1875.—The Inspector of Middle District begs to
 “report to the Medical Officer that the water-supply
 “for drinking purposes in several of the courts in the
 “above district is now in such a condition that it is
 “absolutely necessary some alteration should be
 “made in regard to the same, as there are several
 “cases in which old butts have been allowed to
 “remain, it having been for some years past under
 “consideration to supply water for drinking purposes
 “by means of Hydrants placed in courts, and until

“ this could be carried out your Inspector was in-
 “ structed by the late Medical Officer not to insist
 “ upon the removal of butts then in use, but to see
 “ that the same were kept in a fair condition until
 “ the matter could be settled. The butts and
 “ cisterns in various places have therefore been
 “ allowed to remain, and, consequently, have much
 “ deteriorated since that time. The owners of the
 “ various courts have also been led to believe that
 “ the Hydrants would shortly be fixed, and have
 “ consequently been careful in spending money to
 “ improve the present supply of water, or maintain
 “ the receptacles for its storage in good repair.

“ Your Inspector, therefore, brings to your notice
 “ a few cases in which it appears to him that some-
 “ thing is necessary to be done at once ; they are
 “ taken quite promiscuously, and only selected
 “ because the doors of the places named were found
 “ open at the time of my visit.

“ MIDDLE DISTRICT.

“ Sun Court, Milton Street.—17 houses supplied
 “ by cistern over closets, and butts in court for
 “ drinking purposes. These butts are kept in fair
 “ condition, and usually attended to by a man on the
 “ premises, but having been in use some years are not
 “ what I could wish them to be ; in fact, I have been
 “ compelled to order the removal of one within the

“ past month, and have also received complaints from
 “ owners of adjoining premises of leakage from those
 “ now in use.

“ New Court, Moor Lane. —Of 17 houses, seven are
 “ supplied by butts in *cellars*, and the remainder by
 “ cisterns over water-closets in yard ; these are much
 “ neglected by the tenants, being often in a very dirty
 “ state, and sometimes the adjoining tenants will
 “ throw offensive matter into them to annoy their
 “ neighbours. This I have found the case during
 “ the past week. No. 9, in this place, consists of three
 “ rooms and a cellar, occupied by nine persons, whose
 “ water-supply consists of a butt in the cellar, in a
 “ leaky condition, and capable of holding 36 gallons
 “ only.

“ May Square.—Eight houses supplied by cistern
 “ over closet. I have frequent complaints of this
 “ place, and it has several times occurred that the lids
 “ of the cisterns have been feloniously removed, and
 “ the water made offensive ; and it has been reported
 “ to me that boys have been seen to wash their feet
 “ in the cistern.

“ No. 2, Hanover Court, Milton Street—consists of
 “ six rooms, occupied by 13 persons ; water-supply,
 “ a butt in cellar holding 50 gallons.

“ No. 6, Silk Street—has four rooms, inhabited by
 “ nine persons, supplied by a cistern over the water-
 “ closet in the yard, the capacity of which is 72
 “ gallons.”

A glance at these returns will show the great insufficiency of storage-room in the cisterns, and the few instances detailed will, I trust, suffice to justify me in urging the immediate application of the only available remedy, namely, the substitution of clean and wholesome water in Stand-pipes on the constant service principle, for the intermittent and totally inadequate supply, which, as at present stored, is rendered doubly filthy by the practices mentioned in Inspector Saltmarsh's Report, or by other still more disgusting ones I can only hint at, but which are well known to exist in some of the worst districts.

Appended hereto is a return from each of the three sanitary districts in which the results of recent inspections are accurately tabulated. It will be seen that I have fixed a minimum of 15 gallons as a necessary supply of water per head for each person in occupation. That this is not an extravagant estimate, the following table, taken from Professor Parke's admirable work on Practical Hygiene, will prove.

Table showing the amount of Water-supply in London and other places.

						Gallons per head of Population daily.
New River Company	-	-	-	-	-	23
East London Company	-	-	-	-	-	22
Chelsea - - -	-	-	-	-	-	33
West Middlesex	-	-	-	-	-	30
Grand Junction	-	-	-	-	-	34
Southwark and Vauxhall	-	-	-	-	-	21
Lambeth - - -	-	-	-	-	-	34
Southampton	-	-	-	-	-	35
Glasgow - - -	-	-	-	-	-	50
Derby - - -	-	-	-	-	-	14
Nottingham	-	-	-	-	-	17
Norwich - - -	-	-	-	-	-	12
Edinburgh	-	-	-	-	-	35
Liverpool	-	-	-	-	-	30
Sheffield - - -	-	-	-	-	-	20
Paris - - -	-	-	-	-	-	31
Government Allowance for Soldiers	-	-	-	-	-	15
Convict Prison at Portsmouth	-	-	-	-	-	11

The necessity for your early interference is rendered the more urgent from the circumstance that my predecessors in office allowed these water receptacles to fall into comparative disrepair, in the hope that the expected exchange of them, for the long-promised Stand-pipes, would render the expense of keeping them in working condition, out of proportion to the disadvantage of temporary defects, such as slight leakage, &c., and the instruc-

tions they gave were confined to the maintenance of cleanliness as far as practicable. In this view I concurred when first entering upon my duties, and I accept my full share of the responsibility for what appears to me to be a reasonable compromise ; nevertheless, this state of things has reached a point at which it can no longer be tolerated, and one of two things must be forthwith insisted upon, either that the landlords be called upon to demolish these water-butts entirely, and erect in their stead proper cisterns, or that the Stand-pipes be substituted before the hot weather sets in.

The greatest blot upon our sanitary system is the existence of such like receptacles for water in the cellars or basements of the lowest class of houses, which cellars are for the most part quite uninhabitable, and in which are thrown every kind of refuse and abomination ; and it would be an inestimable boon, physically and medically, to the dwellers in such houses if they could be made independent of such supply, at least, for all kinds of domestic purposes : when this is done, no such barbarous method as that of storing water in butts can be allowed to continue.

One of the best recognised axioms of sanitary science of all ages is, that no water should be used for drinking or cooking purposes which has any direct communication with a water-closet, or through

it with a drain or sewer, by means of the overflow-pipe of the cistern ; this applies more especially to those receptacles which are placed within the house, for in this case the contamination of the water is rendered the more certain by the regurgitation of the sewer gases (driven back from the outlets by strong currents of air), which have a natural tendency to pass from a comparatively cold *outside* atmosphere to the *inside* air of such houses as are in full occupation by several families, where, from the necessity of the case, fires are kept burning on each floor ; this evil is intensified in those cisterns which are provided with *covers*, for here the mephitic gases are retained sufficiently long to facilitate their absorption by the water which thus becomes polluted. The establishment of Stand-pipes will effectually prevent all source of danger from this cause, by providing properly aerated and fairly good potable and cooking water, whilst the internal fittings, where they at present exist, can still furnish a supply for other purposes, until a radical change is effected under the powers about to be given by the Artizans' Dwellings Act. It must be admitted that this suggestion is made in a spirit of compromise, for in the future in all cases where dwellings for the poor are "established anew," nothing short of a constant service of water on every floor will overcome the repugnance the occupants evince in bestowing the requisite labour of fetching it from below, or pre-

vent the baneful and disgusting practice of using the same water for different purposes, which I alluded to in my former report, and which, in spite of much criticism, I must repeat, is within the experience of every practical sanitarian.

The respectable poor are as powerless in this matter as the most degraded, and the alternative they adopt of collecting the water, when it first issues from the main, and keeping it in shallow and ill-adapted vessels in the dwelling-rooms, often under the bed, is fatal to health, and a prolific source of those diseases which are clearly attributable to the absorption by water, thus kept, of the organic impurities given off from the respiration, cutaneous exhalations, and alvine and other excreta, of the many persons who inhabit each room. It is in vain to lecture people, so placed that their only source of water-supply is from a foul water-butt, in contiguity with a still fouler privy or water-closet, situate in a cellar, where, too often, an open communication with drains and sewers exist, and charge them with want of decency or self-respect ; and it appears to me a cowardly kind of philanthropy to exact a rigid cleanliness as a condition precedent to material assistance under impossible conditions.

Although foreign to my present subject, I may be pardoned if I allude to the importance of providing on every floor occupied by a family a separate means

of *removing waste water*, the want of which leads to a repetition of its use, as just described, in order to save the trouble of carrying it down stairs, and thus the consumption of perfectly *fresh* water is seriously limited. I am induced to mention this advantage the more readily since its mode of application is both facile and inexpensive.

Fortunately in the City of London your Medical Officer is relieved from much anxiety and apprehension by the relative purity of the water supplied from the mains, and the admirable state of cleanliness of the sewers under the control of the Commissioners of Sewers ; no necessity exists for any close investigation on his part into the sources of the supply of this element, nor has he to contend with those special consequences to health which accrue in less favoured places by the accumulation of faecal matters after they have once left the drains.

The quality of the water supplied by Stand-pipes already erected in the City is of a tolerably constant character chemically ; of this I have recently assured myself, by analysing the water from every cab-stand in the City, and finding, not only a high standard of purity, but an almost inappreciable variation in the results afforded by the different samples examined. Again, the water from these Stand-pipes is infinitely better, in the amount of solid residue, chlorine, free and albuminoid ammonia

(organic matter), than I have found to be the case with that from several of the City pumps in daily use, and upon which I shall report to you hereafter.

In conclusion, I would again advert to the paramount importance of this question, and to the dangers which may arise from its further postponement, which, in the face of epidemic disease, would lead to disastrous consequences, and bring obloquy and disgrace upon your otherwise excellent sanitary organisation.

I would also crave your indulgence, if it should be thought that I have written too forcibly.

I have the honour to be, Gentlemen,

Your obedient Servant,

W. SEDGWICK SAUNDERS.

APPENDIX.

GIVING A FEW EXAMPLES FROM EACH SANITARY
DISTRICT OF DEFECTIVE WATER-SUPPLY.

WEST DISTRICT.

Situation of House.	No. of Rooms in House.	No. of Persons in House.	Situation of present Water Receptacle.	Capacity of present Water Receptacle.	Average Supply in gallons for each Person, avoiding fractions.	Proper Supply to House, allowing 15 galls. for each Person.	Deficiency of Water-supply to House.
				Gallons.			Gallons.
6, Greystock Place -	8	12	Butt in Cellar -	60	5	180	120
8, Greystock Place -	8	15	Butt in Cellar -	60	4	225	165
9, Greystock Place -	8	12	Butt in Cellar -	72	6	180	108
3, Blewit's Buildings -	8	28	Cistern in Cellar -	94	3	420	326
4, Blewit's Buildings -	8	22	Cistern in Yard -	114	5	330	216
10, Blewit's Buildings -	9	29	Cistern in Yard -	114	3	435	321
12, Blewit's Buildings -	8	35	Cistern in Yard -	120	3	525	405
5, Norwich Court -	3	10	Butt in Cellar -	36	3	150	114
11, Norwich Court -	5	7	Cistern in Cellar -	49	7	105	56
22, Norwich Court -	6	8	Butt in Cellar -	48	6	120	72
6, Mac's Place -	2	4	{ 1 Cistern in Yard over the Water-closet supplies these three houses - }	140	10	210	70
7, Mac's Place -	2	4					
8, Mac's Place -	2	6					
9, Mac's Place -	2	4	{ 1 Cistern in Yard over the Water-closet supplies these three houses - }	143	11	165	22
10, Mac's Place -	2	5					
11, Mac's Place -	3	4					
5, Cloister Court -	3	12	Butt in Yard -	48	4	180	132

EAST DISTRICT.

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Situation of House.	No. of Rooms in House.	No. of persons in House.	Situation of present Water Receptacle.	Capacity of present Water Receptacle.	Average Supply in gallons for each Person, avoiding fractions.	Proper Supply to House, allowing 15 galls. for each Person.	Deficiency of Water-supply to House.
2, Windsor Street -	8	35	Butt in Yard - -	Gallons. 105	3	525	Gallons. 420
6, Windsor Street -	16	52	Cistern in Yard -	156	3	800	644
12, Windsor Street -	8	19	Butt in Yard - -	114	6	285	171
6, Widegate Street -	8	15	Cistern over Water-closet -	135	9	225	90
2, Sandy Street -	8	37	Butt in Yard - -	111	3	555	444
9, Artillery Lane -	8	20	{ One Cistern over Water-closet }	129	3	645	516
10, Artillery Lane -	8	23					
4, Heneage Lane -	8	18	Butt in Yard - -	108	6	270	162
6, Heneage Lane -	8	19	Butt in Yard - -	95	5	285	190
7, Sun Court -	8	17	Butt in Cellar - -	34	2	255	221
1, Swan Street -	10	18	Two Butts in Yard - -	108	6	270	162
5, Swan Street -	10	21	Butt in Yard - -	126	6	315	189
109, Gravel Lane -	14	29	{ Cistern over Water-closet }	58	2	435	377
			{ in Passage - - }				
4, Meeting-house Yard -	6	13	{ Cistern over Water-closet }	143	11	195	52
			{ in Yard - - }				

MIDDLE DISTRICT.

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Situation of House.	No. of Rooms in House.	No. of Persons in House.	Situation of present Water Receptacle.	Capacity of present Water Receptacle.	Average Supply for each Person.	Proper Supply to House, allowing 15 galls. for each Person.	Deficiency of Water-supply to House.
				Gallons.	Gallons.	Gallons.	Gallons.
13, Bell Alley -	8	18	Cistern over Water-closet -	72	4	270	198
2, Swan Buildings -	16	34	Cistern on Roof -	204	6	510	306
8, Langthorn Court -	6	22	Butt in Yard -	66	3	330	264
10, Ropemaker Street -	6	16	{ Butt in Cellar, Cistern } { over Water-closet - }	176	11	240	64
11, Ropemaker Street -	4	9	Butt over Water-closet -	63	7	135	72
84, Milton Street -	6	12	Butt in Yard -	120	10	180	60
68 and 69, Milton Street -	16	64	{ Two Butts in Yard, Cistern } { over Water-closet - }	256	4	960	704
11, Hare Court -	7	25	Cistern on Roof -	200	8	375	175
6, Silk Street -	4	9	Cistern over Water-closet -	72	8	135	63
9, New Court -	4	9	Butt in Cellar -	36	4	135	99
6, Shaftesbury Place -	8	7	Butt in Yard -	49	7	105	56
5, Bromley's Buildings -	4	7	Butt in Cellar -	56	8	105	49
12, Bread-street Hill -	8	12	{ Cistern on Fourth Floor, } { Cistern on First Floor }	120	10	180	60
15, Little Trinity Lane -	7	17	{ Cistern in Attic, supplies } { all the House - }	204	12	255	51
1, Meeting-house Court -	5	5	Cistern on Second Floor -	35	7	75	40